



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,228	02/03/2004	Steven J. Visco	PLUSP039	2205
22434	7590	09/21/2007	EXAMINER	
BEYER WEAVER LLP			CANTELMO, GREGG	
P.O. BOX 70250			ART UNIT	PAPER NUMBER
OAKLAND, CA 94612-0250			1745	
MAIL DATE		DELIVERY MODE		
09/21/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/772,228	VISCO ET AL.	
	Examiner	Art Unit	
	Gregg Cantelmo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 July 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-4,7-17 and 44-51 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 47-51 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4,7-17 and 44-51 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date SEE OFFICE ACTION.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. 9/12/07.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendments received April 30, 2007 and July 6, 2007:
 - a. Claims 1-4, 7-17 and 44-51 are pending. Claims 12 and 47-51 are withdrawn from consideration.
 - b. The specification objections have been overcome in light of the amendment;
 - c. The specification objection is withdrawn in light of the amendment;
 - d. The 112 rejection is withdrawn in light of the amendment;
 - e. The prior art rejections of record are withdrawn in light of the amendment;
 - f. The double patenting rejections stand.

Election/Restrictions

2. Newly submitted claims 12 and 47-51 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: these claims are directed to alternative non-elected first material species and thus are withdrawn from consideration. Since the prior art rejections of record teach of other ion conductive glass-ceramic materials, such as that in Chu and Fu below, and since these materials are a species distinct from the remaining genus of claim 12 which no longer recites LiPON, claim 12 has been withdrawn from consideration as to a non-elected species.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for

Art Unit: 1745

prosecution on the merits. Accordingly, claims 45-51 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

3. Claims 1, 2, 4, 7-9, 13, 17 and 45-46 and are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,413,284 (Chu).

Chu discloses of a protected lithium anode wherein the protective membrane having a smooth surface is provided on the anode and has an ionic conductivity as high as 10^{-2} S/cm (col. 3, ll. 5-22). The barrier layer is a smooth and continuous layer (col. 4, ll. 53-55) and is gap-free (col. 5, ll. 43-54 as applied to claims 1 and 7). The composite membrane includes a metal halide (col. 4, ll. 17-25) as well as a glassy or amorphous metal ion conducting material. The composite will be a mixture such that both materials in the protective barrier membrane will contact both the lithium electrode and one another and the claim language does not preclude that the first and second materials are in the same layer (col. 11, ll. 18-42). Furthermore such barrier layers can exhibit conductivities as high as 10^{-2} S/cm (as discussed above and applied to claim 2). The barrier layer can include materials such as a reaction product between the lithium anode with a conductive nitride layer such as Li_3N or Li_3P (paragraph bridging columns 11 and

12 as applied to claims 2, 9, 13 and 46). The backside of the anode is provided with a current collector 14 (as discussed above and shown in the figures as well as described in col. 3, II. 36-38 as applied to claim 4). The protective barrier layer has an ionic conductivity as high as 10^{-2} S/cm (col. 3, II. 5-22 as applied to claim 7). The anode is lithium (col. 13, line 31 as applied to claim 8). The barrier layer can include a metal halide which has a graded composition that decreases in the barrier layer as a function of distance from the negative electrode active material (col. 11, II. 26-43 as applied to claims 17 and 45).

4. Claims 1, 4, 7-8 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,025,094 (Visco).

Visco discloses of a protected lithium anode wherein the protective membrane having a smooth surface is provided on the anode and has an ionic conductivity as high as 10^{-2} S/cm (col. 10, II. 15-65 as applied to claims 1 and 7). The anode is lithium (col. 6, II. 40-50 as applied to claim 8). The backside of the anode is provided with a current collector 14 (as discussed above and shown in the figures as applied to claim 4). The composition can be a graded layer (col. 8, II. 35-50 as applied to claim 17).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 3 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chu.

The thickness of the membrane is 5 microns thick (col. 3, ll. 15-20) which is held to be "about 10 microns" (as applied to claim 3).

However if it is shown that 5 microns is not "about 10 microns" the differences are minor and would have been apparent and obvious to one of ordinary skill in the art. As recognized by Chu, the thickness can be greater than 5 microns for non-thin film batteries (col. 13, ll. 1-9). Generally, differences in ranges will not support the

patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Chu by selecting the thickness of the barrier film to be 5 microns or greater for non-thin film battery applications.

6. Claims 11, 14 and 15 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chu in view of U.S. Patent No. 6,485,622 (Fu).

The teachings of Chu have been discussed above and are incorporated herein.

The differences between Chu and claims 14 and 15 are that Chu does not teach of the second material being the a ion-conducting glass ceramic as defined in claims 11, 14 and 15.

Fu teaches that the same lithium ion conductive glass-ceramic material is known in the art for use in lithium electrochemical cells (abstract). These materials include ionic conductivities of 10^{-4} S/cm (Table 2).

The composition has an increased ionic conductivity as well as enhanced thermal stability within electrochemical devices.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Chu by selecting the second material to be the lithium ion conductive glass-ceramic material taught by Fu since it would have provided a material which provided both protection to the anode as well as increased the ionic conductivity of the protection composite in the cell. The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

7. Claims 1, 2, 7-9, 11, 16 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bates '765 in view of Chu.

While Applicant has made a species election, since the particular species to the first material was not found in the prior art of record, this species has been deemed allowable. However as to the broader claimed invention, at least a remainder of the materials claimed are taught by the prior art of record, and in particular, anticipated by Bates.

Bates '765 discloses a lithium anode 42 having a composite protective layer 48 provided on the surface of the anode 42 (Fig. 1 and col. 3, ll. 4-5). The composite protective layer 48 includes a first layer 50 of lithium nitride and a second layer 52 of LiPON (col. 3, ll. 3-22). LiPON is known to have an ionic conductivity of 10^{-6} S/cm at 25

°C as evidenced by the enclosed data sheet for LiPON (Fig. 2 as applied to claims 1 and 2). Furthermore the combination layering of Bates '765 includes lithium nitride and LiPON. This combination of materials exemplifies one claimed embodiment. Claim 10 includes a first material of lithium nitride and claim 12 includes a second material of LiPON thus the prior art combination appears to have the same composite composition as that of the instant claims and is expected to exhibit the same ionic conductivity for the composite (as applied to claim 2).

The active material is lithium, as discussed above (applied to claim 8).

The first material is Li_3N , as discussed above (applied to claim 9).

The second material is a glass ceramic, such as LiPON.

The first and second layers are discrete layers (Fig. 2 as applied to claim 16).

The difference between claims 1, 2 and 7 and Bates is that Bates does not teach of the protective film having an ionic conductivity of at least 10^{-5} S/cm (claims 1 and 2) or at least 10^{-4} S/cm (claim 7) or of the barrier layer being a metal phosphide (claim 46).

While Bates teaches of using a LiPON protective layer, the use of alternative protective layers would have been obvious to the ordinary worker in the art.

Chu discloses that various single ion conductors can be used as the protective layer including LiPON and a variety of other materials (col. 11, line 44 through col. 12 line 64). These other materials can exhibit ion conductivities which are as great as 10^{-2} S/cm (col. 3, ll. 5-21). In addition Chu teaches that the barrier layer is a smooth and continuous layer (col. 4, ll. 53-55) and is gap-free (col. 5, ll. 43-54 as applied to claims 1, 2, 7 and 11).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Bates by selecting the barrier layer to be a highly ion conductive, smooth and gap-free material as taught by Chu since it would have improved the both the protective and ion conductive properties of the barrier film. The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

Regarding the claimed metal phosphide reaction product (claims 2 and 46):

Bates '765 teaches that the first layer can be lithium nitride. Chu teaches that both lithium nitride and lithium phosphide are equivalent materials in lithium anode barrier layers which are shown to be excellent reactive bonding materials. Thus while Bates '765 uses lithium nitride for the first material, the combination of Bates '765 in view of Chu reasonably suggests using lithium phosphide as the first layer and that both materials when used are known to react with the lithium anode, thus creating a reaction product interface which improves the bonding of the protective layer with the metal active material.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Bates '765 by replacing the lithium nitride layer with lithium phosphide as suggested by Chu since it would have provided an equivalent interfacing layer which created a reaction product interface that improved the bonding of the protective layer with the metal active material. The

selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945) See also In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

8. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bates '765 in view of Chu as applied to claim 2 above and in further view of U.S. Patent No. 6,485,622 (Fu).

The teachings of Bates '765 and Chu have been discussed above and are incorporated herein.

In the event that the term about is deleted from claim 6 in attempt to define the range over the 102 rejection of Bates '765 above, it is held that the range would still be obvious for the reasons set forth herein.

The differences between Bates '765 and claims 6 and 7 are that Bates '765 does not teach of the second material having an ionic conductivity between 10^{-5} S/cm and 10^{-4} S/cm (claims 6 and 7) or of the second material being the ion-conducting glass ceramic as defined in claims 14 and 15.

Fu teaches that the same lithium ion conductive glass-ceramic material is known in the art for use in lithium electrochemical cells (abstract). These materials include ionic conductivities of 10^{-4} S/cm (Table 2).

The composition has an increased ionic conductivity as well as enhanced thermal stability within electrochemical devices.

Art Unit: 1745

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Bates '765 by selecting the second material to be the lithium ion conductive glass-ceramic material taught by Fu since it would have provided a material which provided both protection to the anode as well as increased the ionic conductivity of the protection composite in the cell. The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

Response to Arguments

9. Applicant's arguments with respect to claims 1-4, 7-11, 13-17 and 44-46 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Art Unit: 1745

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-4, 7-11, 14-16 and 44-46 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20, 25, 28 and 30 of copending Application No. 10/686,189. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Copending Application No. 10/686,189 claims an electrochemical device component, comprising: an active metal electrode having a first surface and a second surface; a protective composite on the first surface of the electrode, the composite comprising, a first material layer in contact with the electrode, the first material layer being ionically conductive and chemically compatible with the active metal; and a second material in contact with the first material, the second material being substantially impervious, ionically conductive and chemically compatible with the first material; wherein the ionic conductivity of the composite is at least 10^{-7} S/cm (claim 1 as applied to instant claims 1 and 2). The elected species materials in both applications are identical in that the first material is the composite reaction product of lithium metal with Cu₃N, the second material is the ion conducting glass of claim 14 in the instant application and claim 28 of the copending application; and the active material is lithium.

The thickness ratio of the first material to the second material in the composite is less than 1-1000 (claims 8-11 as applied to instant claim 3).

The component further comprises a current collector on the second surface of the active metal electrode (claim 2 as applied to instant claim 4).

The ionic conductivity of the second material is between about 10^{-5} S/cm and 10^{-4} S/cm (claims 6 and 7 as applied to instant claims 1, 2 and 7).

The active metal of the electrode is lithium (claim 17 as applied to instant claim 8).

The first material is the composite reaction product of lithium metal with Cu₃N (claims 18 and 19 as applied to instant claims 9, 10 and 44).

The second material is the same (claims 20-22 as applied to instant claim 11).

The second material is identical in scope (claim 28 as applied to instant claims 14 and 15).

The first and second materials are layers and thus being discrete (claim 1 as applied to instant claim 16).

As originally claimed, the first material can be a metal halide or metal phosphide (as applied to claims 13 and 45-46).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claims 1-4, 7-11, 13-17 and 44-46 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of copending Application No. 10/731,771. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Copending Application No. 10/731,771 claims an electrochemical device component, comprising: an active metal electrode having a first surface and a second surface; a protective composite on the first surface of the electrode, the composite

Art Unit: 1745

comprising, a first material layer in contact with the electrode, the first material layer being ionically conductive and chemically compatible with the active metal; and a second material in contact with the first material, the second material being substantially impervious, ionically conductive and chemically compatible with the first material; wherein the ionic conductivity of the composite is at least 10^{-7} S/cm (claims 1, 2, 23 and 24 as applied to instant claims 1 and 2).

The thickness ratio of the first material to the second material in the composite is less than 1-1000 (claim 7 as applied to instant claim 3).

The component further comprises a current collector on the second surface of the active metal electrode (claim 2 as applied to instant claim 4).

The ionic conductivity of the second material is between about 10^{-5} S/cm and 10^{-4} S/cm (claim 6 as applied to instant claims 1, 2 and 7).

The active metal of the electrode is lithium (claim 8 as applied to instant claim 8).

The first material is selected from the same Markush group (claims 9 and 10 as applied to instant claims 9 and 10).

The second material is identical in scope (claims 11-12 and 14 as applied to instant claims 11 and 14-15).

The first and second materials are layers and thus being discrete (claim 16 as applied to instant claim 16).

The first and second materials have a gradual transition (claim 17 as applied to instant claim 17).

As originally claimed, the first material can be a metal halide or metal phosphide (as applied to claims 13 and 45-46).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

12. Claims 10 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The elected species of the first material, composite reaction product of lithium metal with Cu₃N is neither taught nor reasonably suggested by the prior art of record. Chu does not clearly teach of a reaction product of lithium metal with Cu₃N. The reaction product of the instant claims appears to result in a composite Li₃N/copper provides the beneficial effects of the protective Cu₃N film is seen in FIG. 7B; the impedance is dramatically lower in this case.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 1745

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregg Cantelmo
Primary Examiner
Art Unit 1745



9/12/07

A handwritten signature in black ink, appearing to read "Gregg Cantelmo". Below the signature, the date "9/12/07" is written in a cursive hand.